

SPECIFICATION

Part No. : **AA.108.301111**

Product Name : GPS Antenna AA.108 3M RG-174

SMA(M) Connector

Features : Adhesive Mount

Covert stylish design Wide band input voltage

IP-67 Waterproof

Custom designed antennas available

upon request

Photos :



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1.0 Introduction

Our AA.108 Titan adhesive mount external antenna is ideal for robust, covert installations where durability and small size is paramount. It is ideal for telematics and M2M applications for commercial vehicle installations for fleet management etc.

Titan antennas are also widely used for consumer GPS devices when extra sensitivity is required, e.g. navigation devices and speed trap detectors.

The AA.108 is first tier automotive approved IP67 antenna, the part AA.108.301F21 (with GT5 connector) is listed in the global automotive IMDS databases, it has gone through full PPAP design, reliability and quality audits, including audits at the production facility.

2.0 Electrical Specifications

Ceramic Patch Specification									
Outline Dimension	25*25*4mm								
Ground Size	25*25*4mm								
Center Frequency	1575.42±3MHz								
Bandwidth	10MHz								
VSWR	1.92 Max								
Axial ratio	3dB Typ.								
Gain @ Zenith	2dBic Typ.								
Impedance	50Ω								
Polarization	RHCP								

LNA Specification										
Frequency	1575.42MHz									
Impedance			50Ω							
VSWR		1.9	92 Max.							
DC Power Input	1.8V 2.5V 2.7V 3.3V 5V									
Gain	21.8dB	28dB	29dB 31dB							
Noise Figure	1.4dB	1.4dB 1.38dB 1.3dB								
Power Consumption	4.5mA 6.6mA 7mA									
Band Attenuation	40dB @fo±50MHz									
Operating temp	-40°C ~ +85°C									
Storage Temp		-40°	C ~ +90°C							

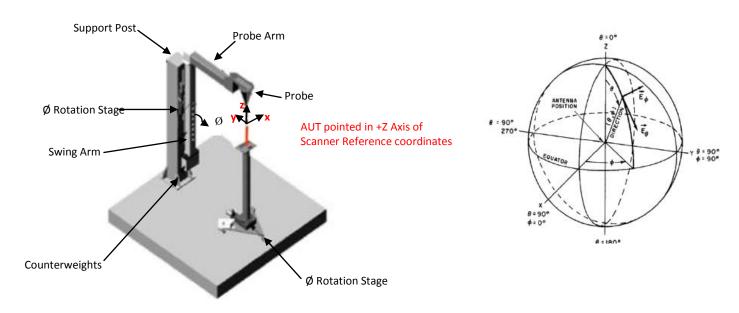
^{*}Formula = Patch Antenna Average Gain + LNA typical gain - RG174 cable loss @1.2dB per meter = Gain at connector

Gain at the Connector - Patch Gain 2dB + LNA Gain 30dB – Cable loss of 1.2dB per metre (@3m = 3.6dB) = 28.4dB approx.

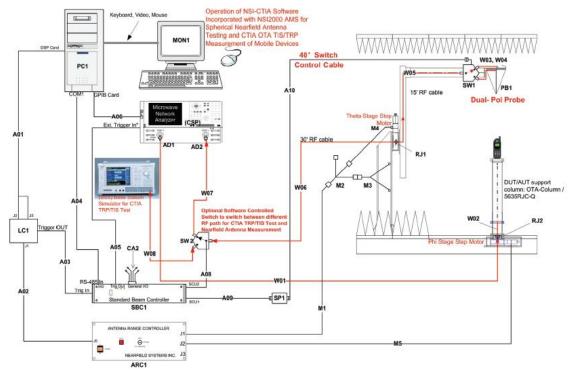
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3.0 Performance Measurement - Test Setup



NFT-500S 3D Chamber Coordinate System Definition



Configuration of NFC-500S 3D Chamber

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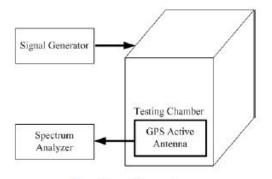




Agilent E5071B Network Analyzer



Anritsu 68147C Signal Generator



Testing Chamber



Anritsu MS2721A Spectrum

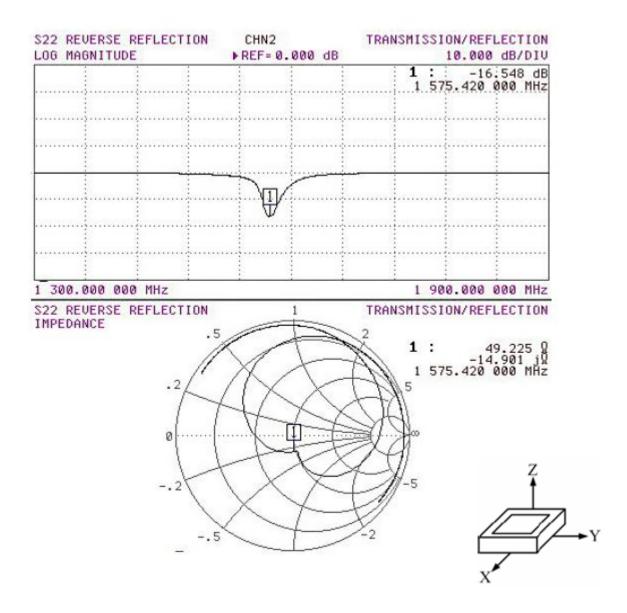
- 1. Note: The antenna is measured in free space
- 2. RG-174 cable attenuation as below

RG-174 cable attenuation(dB/100mm)												
GHz	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
RG-174	67	110	127	153	168	183	207	229	252	272	291	311

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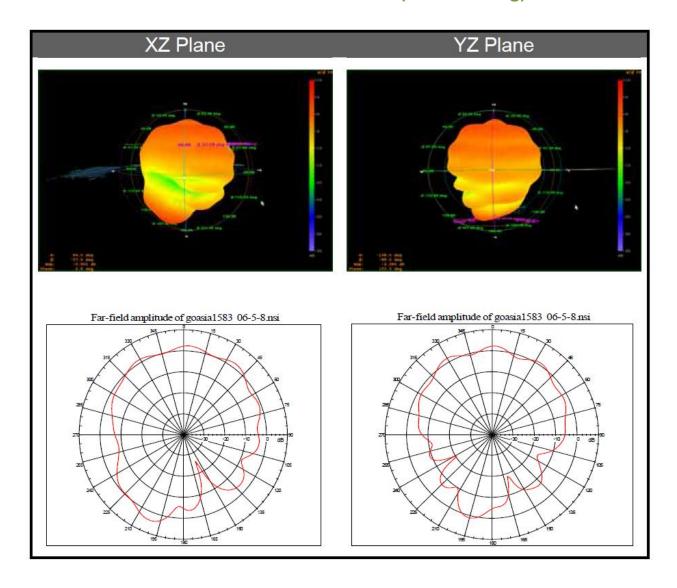
4.0 Ceramic Antenna S11 (with housing)



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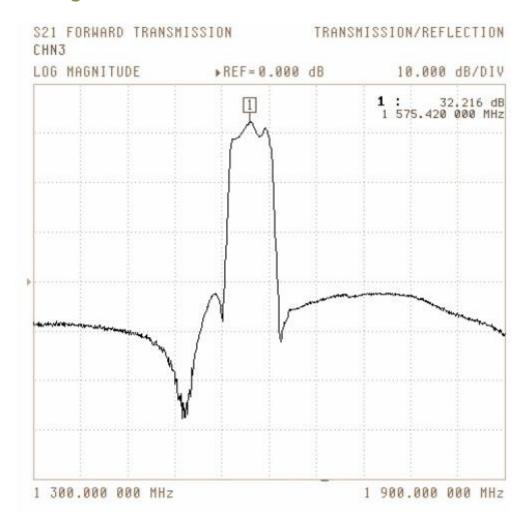
5.0 Ceramic Antenna Radiation Pattern (with housing)



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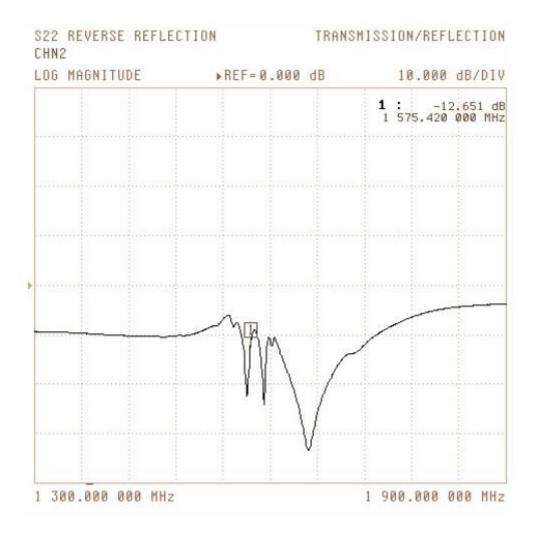
6.0 LNA gain



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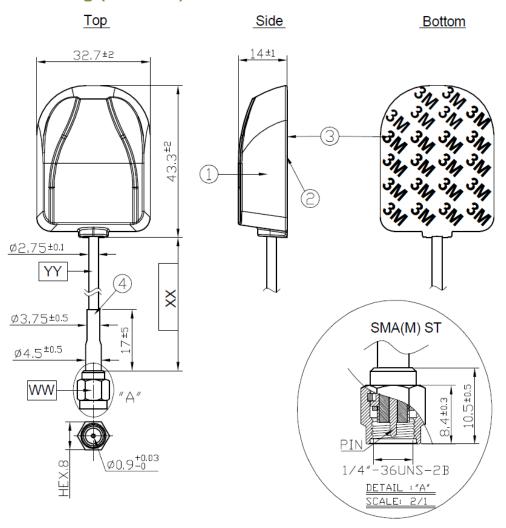
7.0 LNA S22



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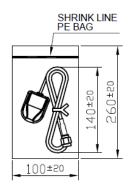


8.0 Drawing (unit:mm)



	Name	Material	Finish	QTY
1	GPS Antenna Housing Top	PC	Black	1
2	GPS Antenna Housing Bottom	PC	Black	1
3	Double Sided Adhesive	3M 4612	White	1
4	Heat Shrink Tube	PE	Black	1

	Name	Spec	Finish	QTY
WW	Connector Type	SMA(M) ST	Gold	1
XX	Cable Length	3000±30mm	Black	1
YY	Cable Type	RG174	Black	1



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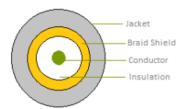


9.0 RG-174 Cable Specification

RG-174 Coaxial Cable

Cable conforming to 2002/95/CE (RoHS)

Structure and Dimensions



Conductor Material – Bare Copper AWG 26 Stranding – 7/0.165±0.008mm	Insulation Material – XL-PE Min. Avg. Thickness 0.45mm Diameter – 1.55 ± 0.05mm NO – 1C	Braid Shield • Material – Tinned Copper • Size –16*5/0.10±0.008mm	PVC Jacket • Material – PVC According to 200/53/EC – Half Matt-Low Toxic • Min. Avg. Thickness – 0.38mm • Diameter – 2.80 ± 0.15mm • Colour – UL813

Electrical & Physical Specification

1	Temperature rating:	80°C
2	Voltage	30V
3	Capacitance nominal (1KHz):	30.8 pF/ft
4	Conductor Resistance at 20°C	MAX 26AWG: 148.94Ω/km
5	Impedance:	$50\pm5~\Omega$

RG-174 cable attenuation(dB/100mm)												
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